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## IN THIS ISSUE

### Humanities and the Need for Documentation

Education in Human Values 3

### Convocation

University of Mysore, Mysore 9

### News from Universities

Computers in Education 13

Training Programmes for  
University Personnel 14

National Library Policy 14

Adult Education Poster  
Competition 14

New Varsities for Rajasthan 15

PAU Adopts Semester System 15

### News from Abroad

Commonwealth Open  
University 15

### News from UGC

INSAT-1B Programme 16

### Sports News

Combined Universities  
Excel 16

Current Documentation in  
Education 18

Theses of the Month 19

Classified Advertisements 21

Opinions expressed in the articles  
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Editor:  
SUTINDER SINGH

## Humanities and the Need for Documentation

L. S. Ramaiah\*

*Prakruti* and *Purusha* are two important elements in the universe. *Prakruti* contains all secrets and *Purusha* with his brain goes on unravelling these secrets. The human brain in its process of unravelling the secrets of nature has created the universe of knowledge. The archipelago of human knowledge consists of arts and humanities, social sciences and sciences. Archaeology of human knowledge reveals that the artistic and humanistic studies have the longest and oldest tradition with refulgent history of their own. The basis of all knowledge, either in humanities or other sciences is imagination, intuition and vision. Imagination is the most extraordinary thing and is the forerunner of all invention and artistic creation. Imagination has both the elements of reason and intuition. The lack of imagination sounds the death knell, both for humanities and sciences. Imagination, therefore, is the basis for scientific hypothesis, social prediction and artistic creation. Imagination is abundantly found in the humanistic studies. The imaginative studies like scientific fiction and utopia were instrumental sometimes for scientific invention. Bishop Sprat in his *History of the Royal Society* (published in 1667) wrote: "Invention. . . requires an active, a bold, a nimble, a restless mind . . . many attempts must be made to no purpose; much treasure must sometimes be scattered without any return; much violence and vigour of thoughts must attend it; some irregularities and excesses must be granted to it that would hardly be pardoned by the severe Rules of Prudence."

The main purpose of Humanities is that of "recovering, preserving and interpreting the cultural heritage of mankind." The Humanities are studies which centre attention on the life of man. The Humanities are considered to constitute a distinct kind of knowledge that is humanistic, that is, which is concerned with human values and expressions of the spirit of man. The definition of Humanities is always a debatable question and they have been defined variously. The enumeration of the disciplines that constitute the Humanities division of the universe of knowledge have been variously stated by various authorities.

I. The U.S. Congress in the law establishing the National Endowment for Humanities states that the term Humanities includes, but is not limited to the study of the following:

1. Languages (both modern and classic);
2. Linguistics;
3. Literature;
4. History;
5. Jurisprudence;
6. Philosophy;
7. Archaeology;
8. Arts (History, Criticism, Theory and Practice of); and
9. Those aspects of social sciences which have humanistic content and employ humanistic methods.

\*Librarian, Central Institute of English and  
Foreign Languages, Hyderabad 500 007, India.

II. The *Arts and Humanities Citation Index* includes the following disciplines in Arts and Humanities.

1. Architecture;
2. Art;
3. Classics;
4. Dance;
5. Film, TV and Radio;
6. Folklore;
7. History;
8. Linguistics and Philosophy;
9. Literature;
10. Music;
11. Philosophy;
12. Theatre; and
13. Theology and Religious Studies.

III. The University Grants Commission (New Delhi) considers the following subjects as constituting Humanities:

1. Classical Languages;
2. Modern Languages;
3. English and Foreign Languages;
4. Linguistics;
5. Philosophy;
6. History;
7. Art History; and
8. Museology.

As can be seen from the above three practices, the Humanities disciplines have been variously listed. It is also highly debated whether linguistics and history constitute humanities or social sciences. The ICSSR considers linguistics as part of the social sciences. The various aspects of linguistics and history constantly criss-cross and overlap the boundaries of social sciences and humanities. Hence, the definition of Humanities and its boundaries are fuzzy.

For a long time libraries and humanistic studies were regarded as synonymous. Everyone knows that humanistic studies are based on libraries and the scholars

in Humanities require large number of books. For these scholars insist on direct and immediate access to everything they need or think they would need in researches. Hence, the libraries constitute the laboratories of the scholars in Humanities.

The later part of the 20th century has witnessed exponential growth of literature, both in human and sciences. It is no longer possible for any single library to acquire all the texts or books or documents published all over the world. This has radically changed the position of the scholarship in Humanities. There is a growing awareness that some thought must be given to humanistic scholarship in general as well to the institutional means and methods by which it can be supported. Eugene Garfield in his preface to the *Arts and Humanities Citation Index* stated that:

- (i) The Arts and Humanities, no less than the sciences, need a large scale index that provides multi-disciplinary coverage;
- (ii) An up to date service issued on a current basis and cumulated annually would be welcome and
- (iii) There was a widespread belief in the potential effectiveness of citation and title-word indexes in Arts and Humanities information retrieval.

No less than an information scientist like Eugene Garfield justified the need for documentation work in the field of Arts and Humanities. Hence, there is a need over-stressing the point any further.

With the above background, let us view the position of Humanities documentation in India. After Independence in 1947, the Government of India while establishing a chain of research laboratories throughout the length and breadth of the country for scientific research did not neglect Humanities. The Government established Sahitya Akademies, both central and state, Sangeetha Nataka Akademies and other agencies for Humanities. These institutions were meant only to encourage the creative talent. They don't act as documentation centres. Sciences and social sciences have national documentation centres like INSDOC and NASSDOC along with their regional offices whereas Arts and Humanities, even though study and research in these areas in Indian universities and other organisations is considerable, the documentation facilities at national level are negligible. There is no national information/documentation centre for these disciplines which have a very important role to play in the multilingual cultural context of India to-

(Continued on page 8)

# EDUCATION IN HUMAN VALUES

## A Synoptic View

Satya Pal Ruhela\*

**"The most important human endeavour is the striving for morality in our action. Our inner balance and even existence depend on it. Only morality in our actions can give beauty and dignity to life. To make this a living force and bring it to clear consciousness is perhaps the foremost task of education."**  
—Einstein

'Education in Human Values' is being acclaimed and accepted as a very new, fascinating and promising programme of education not only in India but in over one hundred countries of the West, Africa and South-eastern countries at the instance of India's leading spiritualists like Shri Sathya Sai Baba, Shri Chinmayananda, and the new Education Policy in India. This field seems to have emerged during the last ten years, although we do find that emphasis on value-impregnated education or imparting education in human values was indeed laid by several educationists like Gandhiji, Tagore, Vivekananda, S. Radhakrishnan, Zakir Husain, and several commissions and committees on education in India. As a matter of fact, education in ancient Vedic Indian society was a classic example of an ideal sort of education in human values. Although it is sociologically impossible to revive that brilliant model of value education now in India or in any other country of this strife-torn planet, yet the emerging enthusiasm for education in human values all over the world seems to reassure the humanity that things would indeed change for the better and man will indeed learn to live like man on this planet.

So much is being churned out on this theme these days by several writers, and speakers in seminars, articles, books and lectures that it is becoming rather difficult to have a very clear and comprehensive picture of what exactly is or should be the programme of human values in education which may be understood by all, discussed in all earnestness, improved upon further, if need be, in the context of the socio-cultural milieu of the countries concerned, and implemented as an innovation that must succeed and influence every aspect and every deliberation of education and society.

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\*Head, Department of Teacher Training and Non-Formal Education, Faculty of Education, Jamia Millia Islamia, New Delhi-110025.

In this paper, an attempt is made to present a synoptic view of the emerging programme of 'Education in Human Values'.

## II

### Emergence of the Programme

Several serious societal realities not only in India but in almost every country of the modern world have shaken and impelled conscientious philosophers, educationists, public leaders and spiritual masters to lay stress on the momentous need of imparting education in human values to people, especially to the younger people who would be the citizens of tomorrow. There is a widespread spectrum of kaleidoscopic *anomie* (normlessness), dissension and conflict, misery, corruption, sensuality, falsehood, hypocrisy and degradation of mind, morals and relationships that this world has indeed become a very unhappy and unfortunate abode for man.

Let us see some of the portraits drawn by leading personalities in this context:

Professor V.R. Taneja, has portrayed the dismal picture in these words:

"Materialism has so engulfed us that every one, by and large, has become a worshiper of Mammon, which rules the roost. The competition for a slice of the pie is fierce and no holds are barred in grabbing as large a slice as possible. All value norms are being cast to the winds in pursuit of pelf and power.

...Even the intellectuals have either retreated in isolation or act as hirelings.

...The universities and colleges are riven by petty factionalism. Emotion claims precedence over reason. The common man is groaning under the weight of rampant corruption. The crime is on the increase. The designs of selfishness, exploitation and hypocrisy are common phenomena. We are in the grip of narrow sectarianism, regionalism and fanaticism. Man may have conquered the moon but has failed in the conquest of mind."

According to Professor N. Vedamani Manuel:

"Today our social life is eaten up with unresolved tensions, conflicts and violence.

The worship of false values and false heroes has assumed such great importance today that there is no wonder that serious students of the rising generation feel lost in a mass of contradictions and confusion. . . . We are today a witness to honouring corrupt politicians, irresponsible businessmen, dishonest demagogues, self-seekers, drunkards and moral wrecks as models of perfection to copy from. Contradiction is the order of the day.

...A double moral standard is the reality which is no healthy setting for decent pupil growth.

...Reality does not seem to them (youth) to reflect the values taught in the books. It puzzles them to find why if values are so important to life and living, they are not reflected in the life of most people in society. Are values a myth to dupe the young into silence?

...Man has become an economic animal in the technological society without developing the finer feelings of the spirit.

...The entertainment media creates in the minds of children and youth the attitudes of violence, crime, fear and sex. . . . The dominant philosophy of mass media is sensationalism and the glorification superficial values. In many cases it is a case of mental pollution."

In the words of Professor D.S. Kothari, the distinguished physical scientist and chairman of the Education Commission (1964-66):

"Science and technology are exploding but wisdom is imploding. It is shrinking. Knowledge is expanding and human personality shrinking. Because of the explosion of knowledge and implosion of wisdom, we find various kinds of grave aberrations, imbalances, calamities. There is explosion of violence in diverse forms. Greed, Hatred and

Delusion form a rapidly rising spiral; the GHD spiral. So on the one hand, we have the exponentially rising, growing spiral of Science, Technology and Productivity—the STP spiral, and on the other hand we have the GHD Spiral.

Globally speaking, the military expenditure every minute is more than a million dollars (Rupees one crore) to fuel the Greed-Hatred-Delusion spiral. Every minute more than a million dollars are spent to make the world a *worse* place than what it was a minute before—less a security and not more. That is the tragedy of the human situation. More than half the total number of scientists and engineers are working on weapons of destruction to make the world *worse* and not better."

World renowned Spiritual Master Bhagvan Sri Sathya Sai Baba, who has launched a world-wide unique and bold programme of Education in Human values now flourishing in 105 countries of the West, Africa and East, has given the following rationale for it:

"Chivalry of speech has increased;  
Chivalry of deed has disappeared;  
Life is laden with false vanities,  
Money has become our God;  
Pride has become our creed,  
Selfishness sits supreme in *Buddhi's* seat;  
Egotism has become our fashion;  
Greed has become our beauty,  
*Dharma* has come to nought;  
Compassion has sunk low;  
Moral fervour is lost;  
Hypocrisy has become the light of our life;  
Love and kindness lie sick and diseased,  
Modern education has blinded men with lust;  
Life has become a burden,  
Minds have gone astray.  
Delay no more for delay is disastrous;  
Fuse morality with education in sweet harmony;  
....."

While delivering the Benediction Address at the Fifth Convocation of Sri Sathya Sai Institute of Higher Learning, on November 22, 1986, Shri Sathya Sai Baba the Chancellor of the Institute, diagnosed the pulse the gravely sick contemporary mankind asunder:

"...Science and technology have expanded vastly today. Their gifts have made life more comfortable and pleasant. But they have brought with them grief, loss and calamity in far greater degree. More than all, they have bred domination and

concentration of authority. . . . The emergence of discordant notes has silenced the call of the divine from within man. He is eager to make his life a merry-go-round but it is turning into a painful tangle of troubles. He does not try to discover the cause of this contradiction. . . . He is restless and has to encounter countless worries. Fear of imminent war or famine has gripped man. Fear while alone at home, fear while on the street! When insecurity prevails, how can man be happy?

...Man has become so stupid that he has neither fear of sin, nor love for God. How can then he be secure in peace and escape from catastrophe?"

The National Policy on Education-1986 document has given the following justification for value education:

"8.4 The growing concern over the erosion of essential values and an increasing cynicism in society has brought to focus the need for readjustment in the curriculum in order to make education a forceful tool for the cultivation of social and moral values.

8.5 In our culturally plural society, education should foster universal and eternal values, oriented towards the unity and integration of our people. Such value education should help eliminate obscurantism, religious fanaticism, violence, superstition and fatalism.

8.6. Apart from this combative role, value education has a profound positive content, based on our heritage, national goals and universal perceptions. It should lay primary emphasis on this aspect."

### III

#### What are Human Values ?

Oxford English Dictionary defines value as "worth, utility, desirability, and the qualities on which these depend." Philosopher R.B. Perry defines value as "an object of interest to someone, for it emanates from particular relation between the interest and its object." Since values, in order to be of any worth, have to depend upon conduct for their actualization, one can define value as "that goal which is worthwhile and the pursuit of which has conducive effect on life." Eminent sociologist Prof. R.K. Mukherjee defined values as "socially approved desires and goals that are internalized through the process of conditioning, learning or socialization and that become subjective preferences, standards and aspirations." This is a very convincing definition.

There are three views about the nature of values:

- (i) **SUBJECTIVE VIEW:** According to this view, desire, liking, interest, striving, volition, act and satisfaction constitute the multiplicity of factors upon which values depend. Values are said to be the functions of these states in the personal life of the subject and are intrinsically bound up with his experience.
- (ii) **OBJECTIVE VIEW:** Values are independent of the valuer and they reside in the object (not in the subject), just as truly as do colour, smell, temperature, size and shape, etc. Plato, Aristotle, R.B. Perry, etc. held this view.
- (iii) **RELATIVISTIC VIEW:** Relativistic thinkers regard values as the relation between a valuing human being and his environment. Value is also taken to be partly feeling and partly reason. The feeling part is hedonistic and the reason part is regulative. Thus, value is considered as a meeting ground of the regulative and constitutive principles.

In fact, the nature of values cannot be understood completely in the absence of these three characteristics, which are different yet essentially part of the same phenomenon. Therefore, all these three viewpoints are to be considered while understanding the nature of values.

Values have been classified as physical values, mental values, emotional values, social values, intellectual values, political values, economic values, aesthetic values, moral values, religious values, cultural values and spiritual values. Values have also been classified as (a) universal, eternal, absolute or root values like truth, love, peace; and (b) temporal or mundane values which include contextual values—social, cultural, economic etc.

All these are human values since they are all good things and they are concerned with the human society in some way or the other. Of course, as many of them as can be aimed at and made use of, should be fostered by education. But to avoid confusion arising out of the impatience and waywardness in making efforts to translate such a tall order into a practical reality, it is desirable to concentrate on some specific and broad areas of values while launching any meaningful programme of Education in Human Values.

It is in this context that Sri Sathya Sai Baba has preferred to emphasize these five pillars of his worldwide programme of Education in Human Values—



*Satya* (Truth); *Dharma* (Right conduct); *Shanti* (Peace); *Prema* (Love); and *Ahimsa* (Non-violence).

Baba's educational programme seeks to promote these five broad universal values, and in these broad values are subsumed several other important values like service to people, cooperation, cleanliness, prayer, simple living and high thinking, etc. is educational programme is universalistic in nature; it combines spirituality with science, national integration with universal brotherhood, present with the past glory and future aspirations of mankind. These programmes are truly secular in the sense that all religions are respected equally.

The Ramakrishna Mission institutions throughout the country have also been keenly interested in the programme of education in human values. Influenced as they have greatly been by the pragmatic and nationalist teachings of Vivekananda, their guiding spirit, they have been greatly emphasising social service, universal brotherhood, growth of human personality and rational ethical code. "What our nation needs today", says Swami Ranganathananda, President of Sri Ramakrishna Math, Hyderabad, "is a pervasive concern for man as man, and not as cut up into castes, sects, and communities, and the formulation of a sanction for the same from a rational ethics and spirituality."

The Chinmayananda Mission has also been emphasising the universal values of truth, right conduct, peace and love. The educational institutions of Sikhs, Jains, Muslims, Christians, Arya Samajis etc. have been emphasising the feelings or values of their particular religions, and in their programmes their denominational rituals, beliefs and teachings of their religious leaders are predominantly reflected.

Ever since, the Prime Minister emphasised the need of a functional value education in his January 5, 1985 address to the nation, after getting a massive mandate, and in particular mentioned the need of "waging an ideological battle against communalism and fanaticism in our schools and universities, in our work places and in our media", promotion of "national cohesion and work ethics" and the need of acquainting "the younger generations with India's ancient heritage and culture", there has been a great deal of enthusiasm and hectic activity in the Union Ministry of Human Resource Development to come out with a functional programme of education in human values. The National Council of Educational Research and Training (NCERT) and the National Council for Teacher Education (NCTE)—the two technical wings of the Ministry, have been try-

ing to spread it through its seminars, conferences and publications. The *Programme of Action* document does not say anything about value education, about which the 'National Policy on Education—1986' emphasised its need under paras 8.4—8.6 mentioned above. While this shows that in reality the Government of India has so far not been able to evolve a concrete or practical programme of Education in Human Values, we may infer from the various points of emphasis made by the Government during the last two years that the most cherished human values which I think, the Government of India seems to be keen to promote through education are Secularism, Social Justice, Freedom, Social Mobility, Scienticism, Respect for the ecology and preservation of ecological balance, small and happy family norm; Respect for the cultural traditions of India, Modernism, and Fighting superstition and fanaticism.

In my assessment, the Govt. of India's scheme of Education in Human Values, which is still in a nebulous form, considerably lacks that unique imprint of universal values of Truth, Right Conduct, Peace, Love, Ahimsa, Equality of Religions, Search for the Spirituality, and aesthetic which the Sathya Sai Programme of Education possess; it considerably lacks in the strong component of service, pervasive concern for man as man, and rational ethics and spirituality in action which Ramakrishna Mission's programme possesses. It does not seem to be inspired by the pious and truly great ideas about value education given by the UNESCO's epoch-making document *Learning To be* (1972), such as : rejection of preconceived, subjective or abstract ideas of man, command of scientific thought and language, self-control, ethical training, creativity, social commitment, and learning unceasing in order to survive and evolve. It also seems to be lacking in its emphasis on educating people about the grave threats of pollution, nuclear armament, international conflicts and unplanned future. We can only hope and pray that our educational policy makers and its executors shall instead of keeping on harping on the superficial and catchy slogans and praising our past all the time, wake up and give the nation a truly balanced and really functional programme of education in human value so that we may not have to meet shocks, jerks, frustrations and defeats in our future in the 21st century. Not only have we to emerge as a nation, but we have to give spiritual, political and intellectual leadership to the other nations of the world.

#### IV

#### Imparting Education in Human Values

There has been a whole lot of debate on the various practical aspect of value education in philosophical and



educational circles throughout the world, and some widely accepted decisions are before us. Let us hurriedly take note of them. 'Education in Human Values' has not to be taught as a separate, compulsory or optional subject in the school curriculum by a separate teacher specialising in it. It has not to be taught at a given or fixed period earmarked as "Value Education" or "Moral Education" period. It has not to be taught in the manner Economics or Political Science is taught in many schools giving high flown lectures, dictating important notes and examining through a written question paper in the end. Also it has not to be treated lightly or frivolously as we find many so-called SUPW (Socially Useful Productive Work) activities are being taught in most of the Indian schools throughout the country by non-serious, uncommitted, disgruntled and unsupervised teachers. It has not to be imparted in only schools; the colleges, universities, non-formal educational institutions, vocational, technical and research institutions—all these have to come under its sway. It has not to be fossilised into a study of certain religious prayers, mantras, sutras and adventures and tales of certain mythological characters and saints. It has to be a living science of man-making combining in itself all the functionally useful elements of spirituality, science, technology, social work, ethics, modernism, futurology, ecology, disarmament, internationalism, and scientific humanism. All teachers and all educated parents and other citizens are expected to contribute their very best in imparting education in human values to whosoever comes in their contact—students, students' parents, employees, workers, friends, neighbours. Their sole effort has to be directed towards the two-fold task of inculcating right attitudes from the beginning and transforming wrong attitudes (once formed) into right attitudes through the numerous techniques such as the following:

- |                          |                          |
|--------------------------|--------------------------|
| 1. Precept-ideal method  | 2. Influencing technique |
| 3. Identification method | 4. Association method    |
| 5. Ventilation method    | 6. Interview method      |
| 7. Story-telling method  | 8. Parable method        |
| 9. Psycho-drama method   | 10. Role-playing method. |

Professor Kireet Joshi in his brilliant paper "An Outline Programme of Value-Oriented Education" has rightly presented the crux of the matter in these poignant words: "The secret of teaching values is to inspire and kindle the quest among the students by means of one's own example of character and mastery of knowledge. It is by embodying values within ourselves that we can really radiate values to our students. Value-oriented education should not be conceived as an enunciation of a series of "do's" and "don'ts".

## V

### Universities' Involvement in Education in Human Values?

The Vice-Chancellors' Conference on 'Value-orientation in Higher Education' held in the Rajasthan University, Jaipur (December 5-8, 1984) deliberated on the role the universities can play in the promotion of proper human values. Prof. T.K.N. Unnithan, the host Vice-Chancellor in his welcome address recalled the pertinent words of the eminent Indian sociologist Prof. Radha Kamal Mukerjee:

"The universities are the nurseries of the values and ideals of life in every country. Without values and ideals the university with its hundred classrooms, laboratories and museums remain but an impressive scaffolding, not an edifice of civilization."

Dr. Zakir Husain had also expressed similar feelings several years ago:

"From a place of transmission of information the university should make itself a place of producing intellectual work, generating habits of systematic, methodical thinking, readiness for self-examination and self-criticism, and allegiance to absolute values, making clear the way for the development of a free moral personality. For a free moral personality is, in my view, the proud product of a sound education."

Professor T.K.N. Unnithan had rightly pointed out "The question is no more whether value orientation in higher education is desirable. The question is how to make higher education value-oriented: what are the concrete and effective steps that we can envisage in a value-oriented education in our universities?"

The question "Is there any hope of our universities' honest involvement in the programme of education in human values" comes in between the two questions posed by Professor Unnithan. What are the social realities of our universities, and in the context of those realities can our universities honestly claim to have any moral right to take up this challenging task? The question of how would come later.

In the same conference, the President of India, Giani Zail Singh, in his inaugural address had lamented, and rightly so, asunder:

"In the present situation, there is hardly any Vice-Chancellor who is free to work independently, honestly and conscientiously. At every step obstacles are placed before them which hamper the sound and efficient functioning of Universities as institutions of learning."

The Chancellor of the Rajasthan University, Mr.

O.P. Mehra had said:

"...It is deplorable that a young scholar joins university as a teacher without any training...Recruitments based on regional considerations run counter to the national integration...Inbreeding in universities is instrumental in the lowering of teaching and academic standards."

We firmly believe that unless teachers of universities and colleges are made to subscribe to the concept of social accountability of their work and conduct, there is little hope that our institutions of higher education shall in earnestness be able to contribute anything concrete in the direction of value education. Luckily, a unique model university-level institution in the form of Sri Sathya Sai Institute of Higher Learning, Prasanthinilayam (Andhra Pradesh) is now emerging, which will inspire and guide all other universities and colleges not only in India but in the whole world as to how integral education "which leads man to strive for perfection in the physical, intellectual, emotional, psychic parts of one's personality" can ideally be imparted. □

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## Humanities and the Need for Documentation

(Continued from page 2)

day. Such a centre at the national level is required to keep the diverse elements of Indian scenario in harmony. This centre can:

- (1) bring fusion and understanding between various Indian languages and literatures; and
- (2) achieve national integration through assimilating the multilingual multicultural elements into a harmonious unity.

Many people may argue that the National Library itself is the agency to cater to the needs of scholars in Humanities. The National Library in India is not adequate and it has been in doldrums for the last one decade. Further, the same argument will be valid even in the case of the social sciences. Therefore, it is time that a national centre for Arts and Humanities with various sub-centres for various disciplines that constitute it should be thought of and organised into a network to provide various documentation services to the scholars in Humanities. This negligence brooks no further delay. As for the structure and functions of the National Humanities Documentation Centre, attention is drawn

to my paper published in the *University News*, February 2, 1987.

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## **An Irreconcilable Contradiction ?**

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**"Is there an irreconcilable contradiction between the traditional idea of the university and the demands on it being increasingly made by society today?" was the question posed by Mr. K.R. Narayanan, Hon'ble Minister of State for Science and Technology, Government of India, while delivering the Convocation Address at the Sixty Seventh Convocation of the University of Mysore. In this scintillating address, he himself offered the answer as a big bold 'NO'. Excerpts :**

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India, as we all know, is a land where the human mind has soared to incredible heights of thought and philosophy and plumbed the unfathomable depths of the mind and soul of man. It is here in this land that perhaps the first fundamental questions were asked of the origin and the nature of the universe and of the predicament of mankind. The tradition of the pursuit of knowledge was therefore long established, and learning was held in high respect and rewarded, be it in gurukulas, ashramas, viswavidyalayas or in exceptional individuals. However, knowledge in this elevated form was the preserve of a creative minority at the uppermost layer of society though a few from below often managed to slip to the top through the meshes of the social network. To the vast majority of the people who remained outside the privileged sphere, religious and philosophical concepts, and knowledge in general, were purveyed in drastically, though beautifully simplified forms through mythologies, rituals and popular literature that captured the emotions and imagination of the masses. It was a magnificent feat of popularisation and communication on a grand scale which could arouse the envy of modern informatics with all its electronic equipment and gadgetry. The fact, however, remains that there was in this golden age of ours a yawning gap in knowledge or in education, to use modern parlance, between a small minority on the top

and the immense majority below and all around. Even in respect of the basic instrument of education and communication, viz., language, a gap existed in the sense that Sanskrit with all its literary and philosophical treasures was not the tongue of the common people.

This situation prevailed almost throughout history as far as the all-India level was concerned, though the upper class language changed from Sanskrit to Persian and then to English. During the long period of British rule a new chasm came into being between the English educated and the rest of the people with the modernised sections of the semi-feudal society and the new industrial bourgeoisie and intelligentsia at the head of the social and administrative power-structure and the masses. Although there was a greater degree of social mobility in this system, basically the wide gap between the educated and the custodians of knowledge on the one hand, and the illiterate masses on the other remained almost superimposed on the caste, social hierarchies and inequalities of the older order. Universities and educational establishments of the modern kind were, in fact, though not in law and theory, institutions standing quite apart from the generality of the people, notwithstanding the filtration process associated with the new education. Even to-day the alienation of the educated from the people is an alarming phenomenon in spite of the tidal wave of the freedom movement

that swept the country, the advent of popular democracy, and the intermittent assaults of socialistic ideas and demands on the system. What Rabindranath Tagore said of the educated classes in India, that they were like a second storey added to an old family house with the architect forgetting to construct a staircase in-between, seems to be still essentially true of the social scene in India.

I have inflicted upon you these rather breezy generalizations in order to highlight the current position of the university in our society and its role in the context of the developmental tasks facing the nation. It is true that today our universities and educational institutions are swelling enormously with numbers with over 35 million students in the universities and about 130 million in the school system, straining national resources and lowering standards of education. Yet the fact is that only 38 per cent of the people are literate with a much smaller percentage managing to get inside the portals of higher institutions of learning. If our universities have been called ivory towers, they are crowded ivory towers, alienated from the masses, their relevance to the problems of the people being remote and their involvement in the vital developmental process almost insignificant.

How can we make the universities and the academic and student community actors and participants in the process of development? The University is a place of independent thinking, where young minds open up and evolve in an atmosphere of freedom and amidst the clash of opinions and ideas. There is thus a conflict between this inherent objective of a University, and the attempt to narrow it down and to harness it to some specific practical national tasks, bringing to bear upon it pressures of society and the machinery of the State. Is there an irreconcilable contradiction between the traditional idea of the

University and the demands on it being increasingly made by society today? I do not think so. As Professor A.N. Whitehead said "In the process of learning there should be present, in some sense or another, a subordinate activity of application. In fact, the applications are part of knowledge. For, the very meaning of things is wrapped up in relationships beyond themselves. Thus, unapplied knowledge is knowledge shorn of its meaning."

The current conditions in our country offer exciting opportunities for such subordinate but vital activity of applications of knowledge in the process of learning itself, establishing some sort of healthy balance in the University system between education, research and social service. First of all, it should be possible to introduce in the study of individual disciplines a new direction which emphasizes and brings out in practical terms their relevance to developmental problems, especially in the study of social sciences, economics, agriculture, architecture, engineering, urban development, environment, health sciences, managerial, physical and earth sciences. We need a problem-oriented rather than a narrowly subject-oriented education in our schools and universities. To acquire knowledge without a central purpose and any sort of subordinate application would be to gather knowledge devoid of meaning and relevance.

We are all aware that the Gandhian system of education had emphasised the joy and excitement of doing things while learning and carrying out service to the people as an integral part of education. Though not in the Gandhian way we had from time to time made halting and haphazard attempts in taking up some of the service aspects of education. In 1969-70 we started pilot projects in 37 Universities enrolling 40,000 student-volunteers in order to expose youth to social problems and to stimulate them to do service under the National Ser-

vice Scheme. That and similar efforts never got off the ground. That must have been partly because in society as a whole there did not exist the spirit of service and the values associated with it. As a people we have been notoriously averse to manual work except those traditionally condemned to labour, an attitude engendered by the caste system. That was essentially a projection of the general attitude of our society which Swami Vivekananda decried when he made his famous remarks about the obsessive pursuit of personal purity by the Indian. "Our religion", he said, "is in the kitchen, our God in the cooking pot; touch me not, I am holy". This traditional attitude was paradoxically fortified by modern bourgeois-bureaucratic values imbibed by the intelligentsia which placed a higher value on sedentary Government service than active work in agriculture, industry or business. Fortunately industrialisation and technological changes are gradually breaking down such false and regressive value systems and attitudes. But we need a thorough-going peaceful, cultural revolution in our country that would completely breakdown narrow domestic walls, dead habits and debilitating distinctions and prejudices so that dignity of labour and mobility of labour are brought about on large scale opening up work of all kinds and opportunities for our young people, enabling their talents and genius to blossom rather than being kept in constricted compartments.

In this context, may I recount a Japanese story. There was a young man who was bitten with curiosity with regard to the ultimate secret of life on earth. He was told of a Buddhist sage who could reveal the secret to him. The young man went in search of him and on reaching the home of the sage he impatiently asked him what the secret of life was. The sage said, 'Young man you have come a long way,

have a bath first'. After the bath he posed the question again to the sage who advised him to rest a little and then have lunch. The lunch over, the young man put the question again and awaited with bated breath for the truth about the secret of life. The answer the sage gave was, 'Let us wash the dishes I hope I am not pouring cold water on the bursting enthusiasm of our young people by telling this story. Because, I believe life is as much a matter of high idealism and hitching your wagon to stars as washing dishes and doing things by your own hands. In fact one can often 'reach the unreachable stars' only if one is prepared to wash the dishes on earth. I can tell you that many Indians who went to Europe and America and became affluent and great did so after passing through a spell of dish-washing experience. Even a great hero like Ho Chi Minh of Vietnam did that once.

I should like now to deal with another aspect of the alienation of our Universities from society—that is lack of effective relationship between the University and Industry. We are today passing through a major industrial and technological revolution. The future jobs for our young people are in the sector of industry, technology, commerce and in the rapidly developing services sector, apart from opportunities in the vast agricultural and rural sector. To day, there is hardly any nexus between the university and the industry and even science and technology are developed in the specialised institutes and laboratories rather than in the more natural habitat of the University system. Universities can become relevant to national development when they are the main centres for the study and promotion of science and technology. For bringing about this crucial change the Government and Society have as much responsibility as universities themselves. In the

famous SILICON VALLEY in the West Coast of the United States of America the genesis of the great electronics revolution centered around one university—the University of Stanford. It was from its research facilities and its faculty and students and the technological parks established around it that the electronics industry developed out of the intellectual and productive inter-action and collaboration between industries and the universities. In the mainly brain based electronic industry of the future the university has an important role to play which would eventually bring about innumerable new jobs for the students who come out of our educational institutions.

A study team appointed by the Department of Electronics of the Ministry of Science and Technology has estimated that the total annual additional requirements of trained manpower in the electronics sector would be 1,25,282 by the end of the 7th Five Year Plan. This volume of new employment created refers only to direct employment in the electronic and computer sector and not the indirect employment that would be generated in the economy as a whole. It is necessary for the universities to begin, seriously and systematically, research and development work in collaboration with our growing industrial sector and also to train students in these new branches of science and technology. The Government has launched a new programme for encouraging and helping our educational institutions in establishing training courses for electronics, and they are planning to set up National Institutes of Informatics Technology (NIIT) in four regions of the country. Of course, apart from all these, Government is also planning to give a vocational and technological bent to our education as envisaged in the new educational policy. It is our aim to make our

schools and colleges and higher institutes of learning to turn out young people who are eminently employable and who would be forerunners in the development race to the 21st century that Prime Minister Rajiv Gandhi has initiated.

Though we have taken it as an axiom, must nevertheless emphasise here the over-riding importance of education in national development not only of higher education but primary and secondary education and also mass education. Eradication of illiteracy is central to this, because, without the majority of our population literate, neither the benefits of development nor the door of the 21st century will be open to us. That is why Prime Minister has declared eradication of illiteracy as an emergency programme called a technological mission to be carried out within a 15 year period. I should like to point out here the experience of Japan in this context. The success of Japan in industrialisation is often misunderstood in India as a result of imitative genius. According to a historian, "Any attempt to explain Japan's exceptional success in national development must give a high degree of credit to the educational system which took in its modern guise just a 100 years ago".

The 1872 Education Code of Japan pronounced that "There shall in future be no community with an illiterate family, nor a family with an illiterate person." In the post-war period Japan took another major decision that educational planning should constitute the main aspect of economic planning. This is a priority that we can well follow in India.

Jawaharlal Nehru once said: "A University stands for humanism, for tolerance, for reason, for progress, for the adventure of ideas, and for the search of truth. It

stands for the onward march of the human race towards our higher objectives. If the Universities discharge their duties adequately, then it is well with the nations and the people. But if the temple of learning itself becomes a home of narrow bigotry and petty objectives, how then will the nation progress or a person grow in stature?"

In India today, it has become imperative for us to rise above narrow bigotry and petty objectives. National vision and national integration have been inherent in our culture and civilization. But, they have become today indispensable for the progress of the whole of India as well as of each and every part of it. The compulsion of development and our predicament in the world have made unity of India and inter-dependence of India and of the Indian people a reality and a necessity. Youth who constitute the majority of our population today are no longer just the leaders of tomorrow but of today. They have already inherited India with all its difficult problems and exciting opportunities and prospects. They have today the privilege of being part of the great adventure of uplifting millions of our people from poverty, malnutrition and ignorance, building a strong united progressive India, and contributing to the peace and prosperity of the world. These are great tasks and to shoulder them you have to prepare yourselves for the responsibility and leadership that is devolving upon you. It is an inevitable and indispensable responsibility. But as Justice Holmes put it "The inevitable comes to pass through efforts." The University is a forum for efforts, for joyous creative efforts in order to shape your own future and the future of the nation. May I wish you all success in these noble efforts. □



# Council of Scientific & Industrial Research

ADVERTISEMENT NO. 2/87

It is proposed to appoint one Scientist 'F' for the Central Leather Research Institute, Madras.

The CLRI is the largest research institution in the world for leather science and technology and has a staff of 700 including about 200 professionals. Besides R & D, the Institute handles B. Tech and M. Tech. (Leather technology) education programme for Anna University and is recognised by several Indian Universities for Ph. D. research Programmes.

This is a senior R & D management post and the incumbent is expected to provide high level leadership in the identification of research tasks, planning and execution of programmes and co-ordination between different disciplines within the Institute and outside agencies including leather industries. In addition, he is expected to assist the Director in the administrative and managerial functions of the Institute.

**Job Requirements :** The selected scientist will head the Tannery area of the Institute and assume responsibility for formulating, organising and implementing R & D projects in the field of leather technology with particular reference to finished leathers. Modernisation of leather industry is identified as a priority area and the incumbent will be expected to take relevant initiatives to modernise leather processing operations aimed at higher productivity and energy, time and material optimisation and such other engineering inputs. He will be required to participate in the teaching (B Tech and M. Tech.) and training programmes in the Institute. The position involves sensitive responsibilities including close industrial liaison.

**Qualifications and Experience :** Ph.D. in leather technology or a related engineering discipline followed by at least 12 years R & D experience in the development/production of various types of finished leathers. Thorough knowledge of all tannery operations and a good understanding of developments and trends in allied leather sciences is essential. Proven record of high level capability is expected, evidenced by product/process development, research publications and technology transfer successes. Teaching experience will be desirable.

**Salary/Conditions of Service :** The scale of pay attached to this post is Rs. 5100-150-5700-200-6300 plus allowances as admissible under Central Govt. Rules. This is a contractual appointment initially for a period of six years. The contract is extendable and the incumbent can also be confirmed. Consultancy subject to an upper limit of Rs. 15,000/- per year is permissible. Free medical aid and leave travel concession are also permissible for the family as per Govt. Rules. Residential accommodation will be provided on payment of usual rent subject to availability.

**Age :** Preferably below 50 years, relaxable in deserving cases.

A duly constituted 'Screening Committee' will decide on the number of Scientists to be invited to meet the full Selection Committee. The decision of the Council in this behalf will be final. Applications from employees working in Govt. Departments, Public Sector Organisations and Govt. funded research agencies will be considered only if forwarded through proper channel and with a clear certificate that the applicant will be relieved within three months of receipt of the appointment order.

Those interested may kindly send in their Curriculum Vitae in duplicate in the form obtainable from the Joint Secretary (Admn.), Council of Scientific and Industrial Research, Rafi Marg, New Delhi-110001, on or before 10th Sept, 1987. Any information about the Institute can be obtained in writing from the Director, Central Leather Research Institute, Adyar, Madras-600 020.

# Computers in Education

An International Workshop on National Issues on Computers in Education was jointly organised by the Technical Committee 3 (TC-3) of the International Federation of Information Processing (IFIP), the Computer Society of India (CSI) and the Indian Institute of Technology, Bombay from March 16 to 18, 1987 at IIT, Bombay. Sixty participants from twenty-three countries participated in discussions related to effectively integrating computers into education. The workshop did not concern itself with computer science education *per se* but was engaged in more general aspects of computer science in the broader context of all education. This was due to the fact that sufficient emphasis have all along been given to 'Learning about computers' while the concept of 'learning with computers' in which the computer, with all its power and flexibility, is merely a tool in the process of problem-solving, had been almost totally neglected despite its very crucial role in all educational activities.

Participants were agreed that the computer is a tool which can be a vehicle for economic, social and educational improvement. But this will only happen with national long-term commitment. This commitment must take the form of sufficient funding levels for long-term as well as short-term projects, careful planning and coordination, and especially major support for professional training—which, all agree, is the number one priority. While historically there has been an emphasis on the acquisition of hardware and software, the major problem now facing all nations is a lack of adequately trained teachers. Unless we are able to solve this problem, we will never realize the

tremendous potential which the computer provides for giving teachers a tool to improve the quality of education.

The workshop was conducted in 10 sessions and for a general overview of the workshop deliberations, the ten issues and theme sessions may be considered under four general section headings:

Section A : The Potential of Informatics in Education.

Section B : Computers in Primary, Secondary and Tertiary Education.

Section C : Computers in Continuous, Vocational, In-Service, Non-Formal and Distance Education

Section D : Computers in Special Education.

The following conclusions and recommendations were reached at the workshop. It is, however, necessary that each country develop its own strategy for best adopting or adapting these conclusions and recommendations.

(1) 'Learning-with-Computers' offers a very powerful tool for educators, and all efforts must be made to harness the potential of computers and informatics in education. Further, this technology enforces a deeper appreciation of educational pedagogy.

(2) Unless backed by well-planned short and long term projects at the National level, the full potential of this educational technology cannot be exploited. Financial considerations of hardware/software costs should be subservient to educational objectives.

(3) The all-pervasive nature of computers/informatics enforces awareness and literacy programmes, and the exploitation of computer-based technologies in both formal and non-formal educational sectors.

(4) Computers and informatics should play a supportive role in all educational areas, and the basic principles and methodologies of algorithmic and systems-oriented thinking should be inculcated into traditional/new teaching systems in all disciplines and areas of learning and teaching.

(5) The computer's versatility makes it an ideal tool for special education requirements, such as educational aids for the handicapped and for the mentally retarded. Also, computers can offer multi-lingual support facilities, widening the sphere of effectiveness into rural areas and breaking down cultural barriers.

(6) Computer-based-education offers excellent scope for exploiting the 'multiplier-effect' of good teachers, and also can be an effective tool in distance educational systems. This educational technology could therefore have a more encompassing role to play in the developing world.

(7) The key towards exploiting computer-based technologies lies in effective teacher training. Teachers have to be trained to:

(a) Accept and adopt computer/informatics-oriented techniques and methodologies into their own teaching, and/or

(b) Teach relevant computer science topics and techniques to make students more competent in their own disciplines.



(8) Computer-based national and regional educational testing and information services should be set-up to support educational planning and implementation efforts.

### **Training Programmes for University Personnel**

Centre for Work Study in Educational Administration, Panjab University, Chandigarh organises a number of training programmes and workshops for the university officers and officials of various universities and institutions in India. With an enormous increase in complexities of university administration, in-service training plays a significant role to develop human resources to prepare them to meet with new challenges. The programmes are aimed at studying the procedures and nature of work in university offices and suggest improvements so as to make them more effective and bring efficiency coupled with economy. Some of the programmes offered for the year 1987 are as follows :

3rd Programme on 'Innovative Approaches to Productivity Improvement in University Administration'

—2.11.1987 to 7.11.1987

2nd Programme on 'Managing Examinations : Administrative Activities'

—14.12.1987 to 24.12.1987

3rd 6-week Basic Course in Work Study/Management Services

—21.12.1987

3rd 13-week Advanced Course in Work Study/Management Services

—21.12.1987

Further details can be had from Shri Shital Prakash, Honorary

Director, Centre for Work Study in Educational Administration, Panjab University, Chandigarh.

### **National Library Policy in Offing**

Mrs. Krishna Sahi, Union Minister of State for Education and Culture, recently announced that a national policy on libraries was being formulated to focus attention on rural libraries, facilities for the backward communities and women, children and the handicapped. She was inaugurating a conference of library professionals, scientists and academics convened by the National Library to commemorate its 150 years of service. She said that the National Education Policy envisaged not only a expansion in library services but also a close monitoring of such services in all the different sectors.

The libraries, she said, would form a vital link in the eradication of illiteracy through audio-visual programmes and relevant reading materials. Through the concept of Jana Shikshan Nilayams, Indian Libraries would become information centres as also promote national integration by disseminating secular and democratic values among the people.

### **German Fellowships for 32 Scholars**

The German Academic Exchange Service has offered 32 fellowships for the academic year 1987-88 in the subjects ranging from engineering and technology to agriculture and natural sciences. The fellowships cover a 4-month German language course at a Goethe Institute followed by one or two years of research at a university or institute in the Federal Republic of Germany.

The fellowship holders have been drawn from universities, CSIR laboratories or other recognised institutes of university standard.

### **Visveswarayaya University**

The Karnataka Government has decided to set up a technical university at Belgaum to be named after late M. Visveswarayaya.

It is also reported to have decided not to allow any more medical, dental or engineering college during the year. This seems to have been done to check the proliferation of capitation fee-based private medical and engineering colleges in the state. However, the Government decided to set up two Ayurvedic colleges, one in Hassan district and the other in Chikmagalur district besides a law college.

### **Adult Education Poster Competition**

The Directorate of Adult Education is organising the fifth National Poster Competition on adult education to encourage artists to prepare motivational material for adult literacy. The theme for the posters is adult education with reference to literacy, functionality and awareness components for the 15-35 age group. The suggested slogans for the posters include: Be literate and spread literacy; Contribute to progress of country; A literate mother is the backbone of a happy family; and Mass movement for literacy is the need of India today. These slogans could be in any of the following languages: Assamese, Bengali, English, Gujarati, Hindi, Kannada, Kashmiri, Marathi, Oriya, Punjabi, Sindhi, Tamil, Telugu and Urdu.

A first prize of Rs. 5,000/- second prize of Rs. 3,000 and third prize of Rs. 2,000 would be given to the winners.

UNIVERSITY NEWS, MONDAY, JULY 13, 1987

## **New Varsities for Rajasthan**

The Rajasthan Government is reported to have decided to set up an open University at Kota and an agricultural University at Bikaner. The State Cabinet has approved the Ordinances and the Universities would start functioning soon.

The correspondence courses being conducted at present by the Rajasthan University would be handed over to Kota open university while the proposed agricultural University at Bikaner will take over all the agricultural colleges located at Udaipur and Jodhpur.

## **PAU Adopts Semester System**

The Punjab Agricultural University (PAU) has decided to switch over to semester system from the 1988 academic session. A deans committee has been constituted under the chairmanship of Dr. B S. Dhillon, Dean, Postgraduate Studies, to work out the detailed time table for the proposed switch over.

According to Vice-Chancellor of the university, Dr. Sukhdev Singh, the step was being taken in consonance with the decision taken last year by the Vice-Chancellors of all the agricultural universities to this effect. He said in the prevailing academic environment the semester system provided a cushion for adjustment in case of loss of days due to various factors.

## **M.S. Mehta Research Fellowship**

The Indian Adult Education Association has instituted Mohan Mehta Research Fellowship to perpetuate the memory of Dr. J.S. Mehta, former President of

the Association and an eminent educationist, statesman and administrator. The object of the fellowship is to enable the individuals to undertake research studies in improving the on-going programme of adult education. Individuals are eligible for research fellowship but the proposal has to be sent through the institution where the applicant is working. The amount of fellowship is Rs. 3,000/- and it should be completed within one year. Further details can be had from the Director, Indian

Adult Education Association, 17-B, I.P. Estate, New Delhi - 110 002.

## **Guinness Book of Records**

M/s Geetha Publishing House of Guntur, Andhra Pradesh, have obtained translation rights (Publication Rights) of the Guinness Books of Records in the four South Indian languages i.e. Telugu, Tamil, Malayalam and Kannada. The Indian publisher has also been permitted by his British principals to include Indian Records in all categories in the translated editions.

# **News from Abroad**

## **Commonwealth Open University Proposed**

An expert group consisting of eminent academicians has suggested the establishment of a University of the Commonwealth to make learning available to rich and poor students. Set up by the Commonwealth Secretary General and headed by Lord Briggs, the Provost of Worcester College, Oxford, the Group has suggested that the proposed university should use satellite technology adopted by open university to enable any learner anywhere in the Commonwealth to study any distance teaching programme available from any bona-fide college or university. A collection of best courses from open universities and distance teaching universities and colleges throughout the Commonwealth has been suggested for the proposed university. It has also been suggested that the teaching should be conducted through correspondence courses, tape recordings and video cassettes.

## **US Honours Hargobind Khorana**

The noted India born gene scientist Dr. Hargobind Khorana has been awarded the U.S. Presidential National Medal of Science for his innovative contributions to biology. His research work has contributed towards the understanding of the gene structure, membrane function and vision and has had a major impact on biological and chemical sciences.

Dr. Khorana, a Noble laureate who is now with the Massachusetts Institute of Technology (MIT), while replying to the felicitations at a reception hosted in his honour, said that his original work in connection with genes had led to the growth of molecular biology. However in the last ten years he had been interested in vision—how light signals get amplified and transferred by proteins to the brain in three dimensional depth.

# News from UGC

## INSAT-1B Programme of UGC

Between 16th July to 31st July, 1987 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV Network throughout the country. For the viewers in Delhi and surrounding areas these programmes can be seen on the second channel.

**16.7.87**

"In Search of the Past-Srilanka & Java"

"Quit India Movement-I"

**17.7.87**

"NASA At Work-XI"

"Space Research—Your Health & Transportation"

"A Talk on what is the Study of Astrophysics"

**18.7.87**

"Techniques in Genetic Engg. Oligonucleotides—Synthesis & Use"

"Kidney Stone Surgery"

"Yoga : For the care of the Spine"

**19.7.87 (Sunday)**

No Telecast

**20.7.87**

"Newton's Law of Motion"

"Change—The Interdisciplinary Way"

"Methods of Observing Transparent objects under a Microscope"

**21.7.87**

"The Indian Parliament—A Conversation with Balram Jakhar"

"Economics Today—Brazil : Threshold of the Future"

"Functions of Management Planning"

**22.7.87**

"Say what you mean in English-I"

"King Lear: An Introduction"

"Language 3-5"

**23.7.87**

"In Search of the Past—Empires of the Maya & the Aztecs"

"Quit India Movement-II"

"Ancient Egypt"

**24.7.87**

"NASA At Work-XII"

"A Talk on Infrared Astronomy"

"The Ozone Story"

**25.7.87**

"Techniques in Genetic Engg In-Vitro Mutagenesis"

"The Scorpion"

"Butterfly : Life Cycle"

**26.7.87 (Sunday)**

No Telecast

**27.7.87**

"Energy : A Question of Balance"

"The Language Of Science"

"Brown Treasure"

**28.7.87**

"The Indian Judiciary : A Conversation with Justice P N Bhagwati"

"Economics Today—World Shipping"

"Ancient Rome"

**29.7.87**

"Say what you mean in English-II"

"Julius Caesar"

"The Creative Process"

**30.7.87**

"In Search of the Past : S. America—The Empire of the Inca"

"Confluence of Culture"

"Secrets of Greenland Ice"

**31.7.87**

NASA At Work-XIII

"Fire to Space—The Story Centoor"

"University Roundup"

## Sports News

### Combined Universities Excel

Combined Universities Junior Hockey team displayed tremendous potential when they made to the finals in the recently concluded Junior National Hockey Championship at Lucknow. In the final match played against the host state, universities' players lost 3-2 and secured the runners up position.

In their sojourn to the finals, Combined Universities routed

Hyderabad with margin of 7 defeated the PEPSU Team 3 trounced Delhi 5-0 in the quarter finals, and in the semi-finals defeated Punjab 6-5.

The team was trained for a month at Aligarh under the supervision Mr. Bhagat Singh, one of the Senior Coaches of the NIS, presently on duty with the Aligarh Muslim University.

# CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
July 17-20, 1987	Seminar on Undergraduate Curriculum and Social Relevance need for Community Colleges	To discuss all aspects of undergraduate education with reference to community needs	Association of Indian Universities in collaboration with Gujarat Vidyapith.	The Organising Secretary C/o Gujarat Vidyapith Ahmedabad 380014
July 22-24, 1987	15th National Conference on Fluid Mechanics and Fluid Power	To bring together researchers and designers, working in diverse fields like Mechanical, Civil, Power, Aeronautical and Chemical Engg. besides Mathematics and Physics to review the state of the art and the recent developments.	Regional Engineering College, Srinagar in collaboration with National Society of Fluid Mechanics and Fluid Power.	Dr. A.M. Bhat, Organising Secretary, 15th National Conference on Fluid Mechanics and Fluid Power, Department of Mechanical Engineering, Regional Engineering College, Srinagar 190 006.
September 18-21, 1987	National Seminar on Energy Education	To discuss various aspects of energy education—meaning and scope, resources, institutionalisation, teacher preparation, curriculum development, and role of mass media.	Department of Education, Rohilkhand University	Dr. Beena Shah, Organising Secretary, NASEEZ, Department of Education, Rohilkhand University, Bareilly-243 001, U.P.
Sept. 21 - Oct. 4, 1987	Training Course in Research Methodology in Geography	To expose the participants to research methods in Geography and quantitative and cartographic techniques employed in Geographical research	Department of Earth Sciences, Manipur University, Imphal.	Dr. R.P. Singh, Department of Earth Sciences, Manipur University, Imphal.
November 16-20, 1987	Seventh National Symposium on Radiation Physics	To provide a forum for a collective discussion and identification of the emerging new directions in the field of Radiation Physics	Department of Physics, Mangalore University in collaboration with the Indian Society for Radiation Physics	Dr. N. Lingappa, Convener, Programme Committee, NSRP-7 and Head, Department of Physics, Mangalore University, Mangalore.
November 25-27, 1987	International Conference on Mud Architecture	To focus discussion on the concept of Mud Architecture and technology & share national & international experience in this field.	Ministry of Urban Development, Govt. of India, in collaboration with the Govt. of Kerala, HUDCO and the All India Housing Development Association.	Mr. V. Suresh, Organising Secretary, ICMA '87 & Regional Chief, Housing & Urban Development Corporation, K.G. Road, Bangalore - 560 009.
November 26-28, 1987	International Seminar on Instrumental Methods of Electro-Analytical Techniques.	To provide a forum to research workers and practitioners for exchange of information and technical perceptions in instrumental methods of electro-analysis.	Indian Institute of Science, Bangalore.	Prof. M.H. Dhananjaya, Principal and Chairman of the Organising Committee, S.J. College of Engg., Mysore.
December 7-11, 1987	Seventh Triennial International Conference on Thin Films. (ICTF-7)	To take stock of recent progress in the field of science, technology and applications of their films.	Indian Institute of Technology, New Delhi, in collaboration with IUVSTA Thin Film Division and Indian Vacuum Society.	Dr. Lalit Malhotra, Secretary, ICTF-7, Thin Film Laboratory, Deptt. of Physics, Indian Institute of Technology, New Delhi-110016.

# AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertations as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

## CURRENT DOCUMENTATION IN EDUCATION

A List of Select Articles culled from Periodicals received in AIU Library during June, 1987.

### EDUCATIONAL PHILOSOPHY

Wilshtre, Bruce. Can the university defend the values upon which it stands? *J Hr Edn* 58(3), 1987, 249-260.

### EDUCATIONAL PSYCHOLOGY

Kerr, Barbara A. The career development of creatively gifted adults. *New Directions Cont Edn* (32), 1986, 59-70.

Milburn, Betty. The role of self-esteem in the career development of adults. *New Directions Cont Edn* (32), 1986, 33-44.

Miller, Juliet V. Helping adults balance career and family roles. *New Directions Cont Edn* (32), 1986, 45-58.

Smart, John C and Pascarella, Ernest T. Influence on the intention of reenter higher education. *J. Hr Edn* 58(3), 1987, 306-322.

### EDUCATIONAL SOCIOLOGY

Byrne, Eileen. Gender in education: Educational policy in Australia and Europe, 1975-1985. *Comp Edn* 23(1), 1987, 11-22.

Charner, Ivan and Rolzinski, Catherine A. Critical questions and issues for integrating education and work. *New Directions Cont Edn* (33), 1987, 87-92.

Charner, Ivan and Rolzinski, Catherine A. New directions for responding to a changing economy: Integrating education and work. *New Directions Cont Edn* (33), 1987, 5-15.

Davis, Diane E and Astin, Helen S. Reputational standing in academe. *J. Hr Edn* 58(3), 1987, 261-275.

Eliou, Marie. Equality of the sexes in education: And now what? *Comp Edn* 23(1), 1987, 59-68.

Moore, Kathryn, M. Women's access and opportunity in higher education - Towards the twenty-first century *Comp Edn* 32(1), 1987, 23-34

Rudd, Ernest. Students and social class. *Studies Hr Edn* 12(1), 1987, 99-106

### EDUCATIONAL PLANNINGS

Kelly, Gail P. Setting state policy on women's education in the Third World: Perspectives from comparative research. *Comp Edn* 23(1), 1987, 95-102

Rolzinski, Catherine A and Charner, Ivan. Improving practice: Lessons from the case studies. *New Directions Cont Edn* (33), 1987, 75-85.

### EDUCATIONAL ADMINISTRATION

Eustace, Rowland. The England ideal of university governance: A missing rationale and some implications. *Studies Hr Edn* 12(1), 1987, 7-22

Lenn, Marjorie Peace. Accreditation, certification and Licensure. *New Directions Hr Edn* (57), 1987, 49-64.

### TEACHERS & TEACHING

Baldwin, Roger G. Professors and professional programs: Fostering mutually beneficial development. *New Directions Hr Edn* (57), 1987, 83-90

Hart, Norah I. Student teachers' anxieties: Four measured factors and their relationships to pupil disruption in class. *Ednl Res* 29(1), 1987, 12-18.

## EDUCATIONAL RESEARCH

Davies, Lynn. Research dilemmas, concerning gender and the management of education in Third World countries. *Comp Edn* 23(1), 1987, 85-96.

Shattock, Michael False images but a new promise in universities' contribution to industrial and technological advance. *Studies Hr Edn* 12(1), 1987, 23-38.

SYNTHESES OF educational productivity research. *Intl J. Ednl Res* 11(2), 1987, 145-252.

## EDUCATIONAL TECHNOLOGY

Johnston, Vivien M Attitudes towards microcomputers in learning: 1. Pupils and software for language development *Ednl Res* 29(1), 1987, 47-55

Langer, Victor Developing a computer-integrated manufacturing education center. *New Directions Cont Edn* (33), 1987, 27-38.

## EVALUATION

Harris, John. Assessment: Providing quality assurance for students, programs and career guidance. *New Directions Hr Edn* (57), 1987, 65-74.

McKeachie, Wilbert J Instructional evaluation: Current issues and possible improvements *J Hr Edn* 58(3), 1987, 344-50.

Pollitt, Christopher The politics of performance assessment: Lessons for higher education *Studies Hr Edn* 12(1), 1987, 87-98.

## ECONOMICS OF EDUCATION

Berg, David J and Hoernack, Stephen A The concept of cost-related tuition and its implementation at the university of Minnesota *J Hr Edn* 58(3), 1987, 276-305

Coughlin, Clatus C and Erickson, O Homer. Determinants of state aid and voluntary support of higher education *Eco Edn Rev* 5(2), 1987, 179-190

Dye, Richard F. Aid sources for higher education: Taxes and other determinants *Eco Edn Rev* 5(2), 1986, 191-196.

Little, Angela. From educating and employing to learning and working. *Prospects* 16(1), 1986, 11-31.

## PROFESSIONAL EDUCATION

Barnett, R A. and others. Models of professional preparation: Pharmacy, nursing and teacher education. *Studies Hr Edn* 12(1), 1987, 51-64

Stark, Joan S Liberal education and professional programs: Conflict, coexistence or compatibility. *New Directions Hr Edn* (57), 1987, 91-102.

## ADULT EDUCATION

Derber, Charles Worker education for a changing economy, New labor-academic partnerships. *New Directions Cont Edn* (33), 1987, 49-58.

Lamdin, Lois and Hassan, Maxine Ballen The business development and training center. An educational maintenance organisation *New Directions Cont Edn* (33), 1987, 39-48.

Levine, Arthur E Career education: A prospective, a retrospective, and a few guesses *New Directions Hr Edn* (57) 1987, 13-20

Miller-Tiedeman, Anna and Tiedeman, David V. Lifecareer today, livelihood tomorrow *New Directions Cont Edn* (32), 1986, 85-94.

Tight, Malcolm. Mixing distance and face to face higher education *Open Learning* 2(1), 1987, 14-18

Wright, Tony Putting independent learning in its place. *Open Learning* 2(1), 1987, 3-7

## COMPARATIVE EDUCATION & COUNTRY STUDIES

PLOWDEN TWENTY years on *Oxford Rev Edn* 13(1), 1987, 13-124

Szechy, Eva. The problems of female education in Hungary, *Comp Edn* 23(1), 1987, 69-74

# THESES OF THE MONTH

## A List of Doctoral Theses accepted by Indian Universities

### BIOLOGICAL SCIENCES

#### Marine Biology

1 Rashid, K K. Abdul Structural studies on some metal complexes of embelin. CUST.

2. Singh, I S Bright Studies on the bacteria associated with *Penaeus indicus* in a culture system. CUST.

#### Microbiology

1. Avadhanulu, K.R. Studies on biological nitrogen fixation with emphasis on *Rhizobia*. Nagpur

2. Ray, Ramesh Mangubhai. Some studies on enzymatic hydrolysis of cellulosic wastes and its recycling. Patel.

3. Sandhya, S. Bio conversion of cellulosic sludges from pulp and paper mill into fungal biomass. Nagpur

#### Botany

1. Behl, Nita. Investigation on some aspects of mushroom, *Agaricus bisporus* (Lange) Singh. Rajasthan.

2. Chopra, Kavita. Studies on MLO/spiroplasma associated monstrosities, their perpetuation and control. Rajasthan.

3 Gopalakrishnan, V. Studies on *stenochlaena* and related genera. Calicut.

4. Goswami, R.S Pharmacogenetic studies on root extracts of *Asparagus racemosus* and *A ascendens* with special reference to human consumption. Bhopal

5 Jain, Aruna. The effects of industrial pollutants on the ecology of certain herbaceous plants of Bhopal with special emphasis on chlorophyll formation and productivity. Bhopal.

6 Joshi, G C Studies on the thistle and legume families of Kumaun Kumaun

7 Joshee, Nirmal Studies in the reproductive biology of alkaloid yielding solanums Histological, histochemical, electrophoretic and physiological aspects of stylar heteromorphism in *S. khasianum* Clarke and *S. sisymbirifolium* Lam. NEHU.

8. Kundu, Anadikumar Cytological and photometric analysis of some medicinal species and their use as parameters for rapid screening Calcutta

9 Naugaria, Mahendranath. Population ecology of *Atylosia scarabaeoids* in the rangelands of Jhansi, U.P. Bundelkhand.

10 Nigar Alam Chromosome characteristics: DNA estimation in *commelinaceae* Calcutta.

11. Ramnath, Elaswarapu Use of haploid cell lines of crop plants in evolving mutants of significance in plants breeding. Calcutta.



12. Sen, Sibnarayan. *Studies on the induced genetic variability and selection response in irradiated lentil*. Calcutta
13. Shama Rao, S. *Fungal diseases of mulberry in Karnataka*. Bangalore.
14. Sharma, Kundan Kumar. *Flora of Rajasthan: A floristic survey of series inferae (Sensu B & H) Rajasthan*
15. Tewari, Manjusha. *Ecology of pines on eroded lands in Kumaun Himalaya*. Kumaun.

#### Zoology

1. Bandyopadhyay, Manisha. *The role of sympathico-adrenomedullary system on the reproductive physiology of the weaver bird, Ploceus philippinus*. Calcutta
2. Bhatta, Gopalkrishna Madhava M. *Some aspects of reproduction in the apodan amphibian ichthyophis* Karnataka.
3. Bisht, Yashodhara. *Studies on the effect of environmental factors on hypophysis and gonads in mahaseer, Tor Putitora* Kumaun.
4. David Raj, V.S. *Biology of a rhynchobdellid leech, Batracoidella reticulata* Kuburaki. Madurai.
5. Pannu, Harmahinder Kaur. *Studies on mating behaviour, oogenesis and histochemistry of the female reproductive organs in epilachna beetle, Epilachna vigintiocto mentata* Fabricius HP.
6. Samundra Singh. *Ecological studies in relation to fisheries potential of Bund Baretha reservoir and its comparison with Dehra pokhar Jaghina*. Rajasthan
7. Sharma, P. *Change induced by certain chemicals and radiations, gamma rays, in gonads of Cypinascarpic and its various stages of development*. Bhopal
8. Shukla, V.K. *Studies on the stress induced neuroactive material and its effects on the endocrine glands in some animals*. Bhopal
9. Sinbahikum, Amiyaprasad. *Histophysiological studies of spermatogenesis and accessory organs of reproduction in Bandicota bengalensis* Gray, a mammalian pest Calcutta.
10. Solanki, G.S. *Studies on desertification Ecology of goat population of arid to marginal semi arid regions of Western India*. Saurashtra.
11. Sudha, H.R. *Studies on some aspects of the reproductive biology of Mustus vittatus together with an account on the development of hypophysis in Catla catla* Bangalore.

#### Medicine

1. Chattopadhyay, Ipsita. *Effects of certain metallic pollutants on mammalian systems* Calcutta
2. Chaudhuri, Chandra. *Studies on some hormonal aspects of fertility and infertility* Calcutta.
3. Ghosh, Sukla. *Glucose homeostasis in the human fetuses* Calcutta.
4. Gundappa, Grijia. *Study of effects of chronic under-nutrition on the morphological features of the developing cerebral cortex* Bangalore.
5. Gupta, Jang Bahadur. *Pharmacology interventions in experimental myocardial infarction: A biochemical and hemodynamic study* Rajasthan.
6. Mathur, Bhagwan Swaroop. *Effect of some dietary factors (hypervitaminosis A & C) vegetable oils and cannabis on structure and function of testis in rats*. Rajasthan.
7. Rajurkar, Veena B. *Some biochemical studies in diabetes and other stress conditions* Nagpur.
8. Ram Reddy, Venkata. *Immunodiagnostic studies in filariasis* Nagpur.
9. Satya Narayan. *Cytotoxicity of intratracheally administered xenobiotics in rat lung*. Panjab.

#### Agriculture

1. Banerjee, Malay Kumar. *Studies on leaf curl virus resistance in tomato, Lycopersicon esculentum* Mills. HAU.
2. Ghose, Pralhad Singh Dalpatsing. *Studies on the food feed intercropping in Sorghum, Sorghum bicolor (L)*. Moench. MP. Krishi.
3. Jadhav, Ankush Shrirang. *Study on the wheat based cropping system with reference to fertilizer management*. MP Krishi.
4. Pawar, Vithal Sukdeo. *Scheduling of irrigation and effect of phosphate fertilization on the growth, yield and quality of garlic, Allium sativum L*. MP Krishi.
5. Rajendra Prasad. *Water-use and fertilizer-use efficiency of maize and wheat as affected by root manipulation through tillage on two soils*. PAU.
6. Randhawa, Jatinder Singh. *Genetic assessment of floral biology and productivity in brinjal, Solanum melongena L*. PAU.
7. Sarawgi, Arvind Kumar. *Partial diallel cross analysis of yield and its components in rice, Oryza sativa L* JN Krishi.
8. Sharma, Om Prakash. *Inheritance of resistance to mosaic virus disease and some qualitative and quantitative traits in Capsicum annuum L* YS Parmar.
9. Shau, Ramkumar. *Inheritance and allelic relationships of bacterial blight in rice, Oryza sativa L* JN Krishi
10. Tagi, Alok. *Effect of different levels of nitrogen, potassium and irrigation on growth, cropping and quality of plum, Prunus salicina Lindl cv santa rosa*. HP Krishi.

#### Veterinary Science

1. Barmanray, Asinkumar. *Studies on bionomics, experimental infection with miracidia paramphistomes and mollusca cludal trials on Indoplanorbis exustus (Desaves, 1834)* HAU
2. Buragohain, Sushil Chandra. *Study on some gonadotropin induced changes in reproductive status of developing male goats* HAU
3. Khanna, Kuldeep. *Studies on growth, biochemical and hormonal changes in blood and a semen quality of turkeys subjected to feed restriction* HAU

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Dated the 30th June, 1987

Applications are invited for the following posts :

Sl. No.	Name of Posts	No. of Posts	Specializations
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2.	Professor in Commerce	1	Open
3.	Professor in Economics	1	Econometrics
4.	Associate Professor in Commerce	2	(i) Accounting & Finance (ii) Management Studies
5.	Associate Professor in Mathematics	1	Open (Preferably Pure Mathematics)
6.	Associate Professor in English	1	English Language Teaching (Method)
7.	Associate Professor in Earth Science	1	Geology
8.	Associate Professor in Chemistry	2	(i) Inorganic (ii) Open
9.	Associate Professor in Life Science	1	Plant Pathology/ Plant Physiology
10.	Associate Professor in Manipuri	1	Folklore
11.	Associate Professor in Hindi	1	Comparative Literature
12.	Associate Professor in Physics	1	Theoretical/Solid State Physics
13.	Associate Professor in Computer Science	1	
14.	Assistant Professor in Commerce	1	Marketing Management
15.	Assistant Professor in Life Science	1	Entomology
16.	Assistant Professor in Anthropology	1	(Temporary) Bio-statistics
17.	Assistant Professor in Political Science	1	Palaeo-Anthropology
18.	Assistant Professor in Manipuri	2	(i) South East Asian Studies (ii) Government & Politics in India
19.	Assistant Professor in Linguistics	1	Manuscriptology
20.	Assistant Professor in English	1	Open
21.	Assistant Professor in Economics	1	English Literature, Language
22.	Assistant Professor in Library Science	1	Agricultural Economics
23.	Assistant Professor in Earth Science	2	Open
24.	Programmer in Computer Science	1	Petrology/Igneous/ Metamorphic

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(a) Good academic record with a doctoral degree or equivalent published work in the relevant field. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

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(c) This condition may be relaxed in the case of candidates with outstanding record of teaching/research

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(A) Good academic record with a doctoral degree or equivalent published work in computer science. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) Production of teaching materials.

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Applications received late or incomplete in any respect may not be entertained. Persons already in service must apply through their employers so as to reach this office on or before the last date fixed. No candidate will be considered for appointment unless he/she produces a "No Objection Certificate" from his/her employer at the time of interview.

Retired persons who have not attained the age of 62 years may also apply for appointment on contract basis. It will be open to the University to consider the names of suitable candidates who may not have applied.

REGISTRAR

### PANJAB UNIVERSITY CHANDIGARH

Advertisement No. 5/87

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Note :—1. The Vice Chancellor could place before the Selection Committee names of suitable persons for its consideration along with the applications received in response to the advertisement.

2. It is not obligatory on the part of the University to call for interview every candidate who possesses the essential qualifications.

3. The number of vacancies may change.

4. The University may also prepare panels of suitable candidates for appointment against vacancies occurring within a specified period.

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TIRUCHIRAPALLI-620 024

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1.	Reader	Library & Information Science	1	Non-plan; reserved for SC
2.	Lecturer	Library & Information Science	1	Non-plan; open merit
3.	Lecturer	Computer Science	1	Temporary; open merit

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S K Rajagopal  
REGISTRAR

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Invites applications for the following courses

Name of the Course	Duration	Eligibility	Medium	Last Date	Application Fee and Prospectus
Post-Graduate Diploma in Science Education	One Year	B.Sc., B.Ed. B.Sc. M.Sc	Eng.	20.7.87	Rs. 10/-
Post-Graduate Diploma in Mathematics Education	One Year	B.Sc. B A.	Eng.	20.7.87	Rs. 10/-
Master of Education	One Year	B.Ed.	Eng & Mar.	8.7.87	Rs. 20/-
Master of Philosophy in Education	One Year	M.Ed.	Eng.	15.7.87	Rs. 20/-

Dr. V.B. Mehta  
PRINCIPAL

## UNIVERSITY OF LUCKNOW

Advt. No 3/1987

Wanted one temporary Director for Academic Staff College in the grade of Rs. 1500-2500 plus usual allowances. The post has been sanctioned for the present till March 31, 1990 but is likely to continue thereafter.

### Qualifications

Eminent scholarship with published work of high quality and active engagement in research and

ten years' experience of teaching or research and experience of guiding research at doctorate level

OR

Outstanding scholarship with established reputation for significant contribution to knowledge.

Candidates with experience of organising orientation/professional/training methods will be preferred.

Higher start may be given to an exceptionally qualified candidate. The Selection Committee reserves

its right to consider also candidates in absentia who have not applied for the post.

Prescribed application form can be obtained, free of cost, by sending a self-addressed envelope size 23×10 cm. with postage stamp worth Rs 5.50 to cover registration charges, from the office of the Registrar. Last date for submission of applications, duly completed in all respects with recent testimonials, publication etc. and Bank Draft for Rs. 5/- (Postal Order or Money Order will not be accepted) in the name of the Registrar, Lucknow University, payable at any Bank in Lucknow, is August 31, 1987.

Applications without Bank Draft will not be entertained. Candidates who are in service should send their applications through proper channel. Applications to out-station candidates will be sent upto July 27, 1987.

B M. Singh  
REGISTRAR

## GURU NANAK DEV UNIVERSITY AMRIT AR

Faculty of Engineering and Technology

### ADMISSION NOTICE

B. Tech. Four Year Programme  
Session 1987-88

Applications are invited for admission to 1st year of B.Tech programme in (i) Electronics Engineering, (ii) Computer Engineering, (iii) Bio-Technology.

### ELIGIBILITY

(2.1) Pre-Engineering of the Guru Nanak Dev University with a minimum of 50% marks.

OR

(2.2) Part I of B.S.C T.D.C (Non-Medical) of Guru Nanak Dev University with a Minimum of 50% marks.

OR

(2.3) Any other examination recognised equivalent to 2.1 or 2.2 by the Guru Nanak Dev University.

Prospectus and admission forms can be obtained from the Deputy Registrar (General) after 20th June, 1987 on payment of Rs. 20/- in cash and Rs. 27/- by post. The postal order/draft should be made in the name of the Registrar. Last date of receipt of applications in the office of the Head. Deptt of Electronics and Technology is 20th July, 1987 or within 10 days of the declaration of Pre-Engg./B.Sc. Part I result whichever is earlier.

Admission shall be made on the basis of Entrance Test and aggregate marks of Physics, Chemistry and Mathematics in the qualifying examination. Entrance test for all eligible candidates shall be held on July 26, 1987. Other details as per prospectus.

DEAN, ACADEMIC AFFAIRS

**School of Correspondence Courses & Continuing Education**  
**UNIVERSITY OF DELHI**  
**DELHI-110007.**

**Admission Notice for B.A. (P), B.Com. (Pass), B. Com.(Hons.), M.A. : Hindi,  
History, Political Science, Sanskrit and M.Com. Academic Session 1987-88.**

Admission is open to persons from all over India, Indian Nationals working in Indian Missions abroad and to their dependents, and also to Indian Nationals settled abroad.

**Eligibility for admission to :**

First year of B.A./B.Com. (Pass) Course: A Candidate must have passed Senior School Certificate (Class 12) or an equivalent examination.

**B.Com. (Hons.) 1st Year :**

At least 45 per cent marks in aggregate in Senior School Certificate (12 Years) or an equivalent examination.

**Age Requirement—17 years as on 1st October, 1987.**

Subjects of study for B.A. (Pass) Course: English/Hindi/Urdu/Tamil/Punjabi (M.I.L.), Economics, History, Political Science, Mathematics, Sanskrit and Elective English.

Hindi and English are the media of instruction.

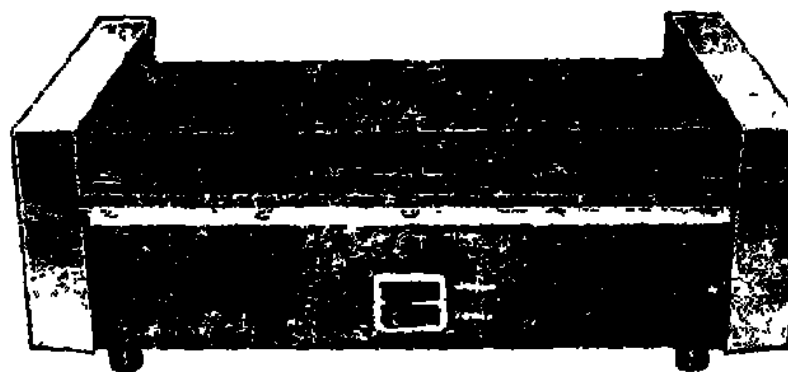
The Prospectus with application form is available on payment of Rs. 5/- by Money Order, Rs. 10/- by Money Order for abroad and Rs. 3/- by cash from the School between 9.00 a.m. to 4.00 p.m.

The last date for the receipt of applications duly completed together with fees is 7th August, 1987. Fees can be remitted by Bank draft drawn in favour of the Principal, School of Correspondence Courses and Continuing Education, Delhi at State Bank of India, Delhi University Branch.

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# NETAJI INSTITUTE FOR ASIAN STUDIES

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CALCUTTA - 700 020

Phone : 43-3160

Advertisement No. EAS/04/87

Applications, typed in triplicate, giving full particulars as indicated below, are invited for the following posts so as to reach the Director of the Institute by **14th August, 1987**.

- I. **Fellow/Asstt. Professor** — One each in the Departments of (a) **Social and Political History**, (b) **Economic Cooperation**, and (c) **Ethnolinguistics**, initially tenable for three years (though renewable at the discretion of the authorities) in the Scale of Pay : Rs. 1200-50-1300-60-1900/- with benefits of admissible allowances as per State Government Rules
- II. **One Senior Scholarship** of Rs. 1000/- p.m (consolidated) in the Department of **Ecology of Human and Physical Resources**, tenable for a maximum period of three years, subject to satisfactory performance.
- III. **One Junior Scholarship** of Rs. 700/- p.m (consolidated) each in the Department of **Ecology and International Relations**, tenable for a maximum period of three years, subject to satisfactory performance.

**Minimum Qualifications :** For (I) First Class Masters' Degree with High Second Class Honours or High Second Class Masters' Degree with First Class Honours in the relevant subject and Ph.D. or equivalent research work. **Desirable :** Experience of research supervision in the relevant field; knowledge of the history and language of at least one South, Southeast Asian Country other than India.

For (II) Master's Degree in the relevant subject with at least 50% marks in the aggregate on an average for all public examinations. **Desirable :** Ph.D. level research experience or publication of sufficient merit.

For (III) Minimum qualifications as for (II).

**Age Limit :** For (I) below fifty, for (II) & (III) below thirty.

## Particulars Required

1. Name, 2. Mailing Address, 3. Date of birth (to be certified), 4. Academic Record (to be certified) giving year of passing, division and percentage of marks obtained, award/distinctions, if any, for all public examinations, 5. Research Experience, 6. Research Guiding Experience (only for Item No. I), 7. Publications, 8. Present occupation and salary drawn, 9. A brief scheme of research proposed to be undertaken if appointed.

**N.B.** 1. The choice of the Selection Committee may not be confined to those who formally apply. Prescribed qualifications and age limit may be waived in case of candidates found otherwise outstanding.

2. In-service candidates should apply through proper channel.

## **Council of Scientific & Industrial Research**

### **ADVERTISEMENT NO. 1/87**

CSIR is a premier R & D organisation in India. It has a network of 40 research laboratories spread all over the country, covering research activities ranging from micro-electronics to metallurgy, medicinal plants to industrial machinery, chemicals to molecular biology and oceanography to aeronautics. The Headquarters of the CSIR, located in New Delhi, plans, coordinates and oversees the activities of these laboratories.

CSIR is looking for middle level management Scientists for its Headquarters on System Analysis/Management Information Systems/Industrial Economics/Publi-city and business promotion. There are, at present, six positions which may be filled up in the grade of Scientist 'C' (Rs. 3000-100-3500-125-4500 plus allowances at Central Govt. rates). If suitable candidates are not available, the posts may be filled up in the lower grade of Scientist 'B' (Rs. 2200-75-2800-EB-100-4000 plus allowances). The number of vacancies may, however, vary.

**Qualifications & Experience :** I Class M. Sc./I Class B.E. with six years experience/M.E. with four years experience/Ph.D. (Science) with two years experience/Ph.D. (Engineering).

The selected Scientist will be placed on probation for a period of two years and on satisfactory completion of probation he will be placed on contract for a period of six years including the period of probation. The contract may be renewed and the incumbent may also be confirmed.

The applications received will be screened by a duly constituted Screening Committee and the decision of the Council in this respect will be final. Applications from employees working in Govt. Departments, Public Sector Undertakings and Govt. funded agencies will be considered only if forwarded through proper channel with a clear certificate that the applicant, if selected, will be relieved within one month of receipt of appointment order.

The application forms for the above posts may be obtained (free of cost) from the Joint Secretary (Administration), CSIR, Anusandhan Bhawan, Rafi Marg, New Delhi-110 001 upto 24.7.1987. Completed application forms together with application fee of Rs. 8/- (Rupees eight only) in the form of Crossed Indian Postal Order in favour of Council of Scientific & Industrial Research at New Delhi should reach him latest by 14.8.1987. Candidates belonging to Sch. Caste/Sch. Tribes are exempt from payment of application fee.